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ECOLOGICAL ASPECT OF THE UPPER CARBONIFEROUS – PERMIAN „CYATHAXONIA" FAUNA EVOLUTION (THE EASTERN EUROPEAN PLATFORM AND THE URALS)

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Isolated locations of „*Cyathaxonia*" fauna occur in different facies, but abundant and variable assemblages characterize ecologically stressed environments for the typical shelf biota of the carbonate platforms and their margins. The recurrent assemblages of the „*Cyathaxonia*" fauna appeared repeatedly during the Upper Carboniferous-Permian. A few examples of the „*Cyathaxonia*" association –from the Moscovian/Kasimovian boundary, from the Late Artinskian and some from the Kungurian -Kazanian are considered. The scarce assemblage represented by *Lophophyllidium* sp.1, *Pseudowannerophyllum* sp. 1, *Cyathaxonia* aff. *cornu* Michelin, *Kabakovichiella* sp. has been found recently in the Upper Moscovian (Myachkovian) clay layers of the Dalnyi T'ulkas section (South Urals). Large „caninomorphs", represented by *Pseudotimania* and *Siedleckia* occurin the underlying beds of the Podolskian Substage. Comparison with the assemblage from the contemporaneous deposits of the upper part of the Picos de Europa Fm. (Spain) shows a similar generic composition (Rodriguez, Kullmann, 1999). The appearance of the assemblage coincides with the deepness of the basin that resulted in the accumulation of clay, tuff, wackestone and black silica layers. The isotopic records show some increase of ^{13}C value and decrease of ^{18}O both in the Uralian and Moscow basin sections (Grossman et al., 2002) The latter is considered as a warming trend, that allows to refer the assemblage to thermophilic deep-water environment.

The Upper Artinskian assemblage is one of the most widespread and stratigraphically remarkable in the preserved Pre-Uralian foredeep. Corals have been found in seven localities in latitude 42 - 64 North. The difference between the northern and southern occurrences was expressed in the predominance of the rugosa with columnella (*Lophophyllidium, Pseudowannerophyllum*) in the northern localities. The appearance of the Mid-Artinskian „*Cyathaxonia*" fauna seems to be stimulated by an influx of cold Panthalassa ocean water. The following Kungurian weakening of cooling did not result in the re-appearance of typical shallow water colonial corals, but in the scarce distribution of non-variable assemblages. *Sochkineophyllum* and *Ufimia* were identified at two levels in the Upper Kungurian (former Ufimian). Their occurrences coinciding with transgressive impulses have been established in the siliciclastic inner-shelf deposits, which accumulated in the carbonate-starved basin. Corals represented by *Euryphyllum boreale* Fedorowski& Bamber, 2001 are known from a similar stratigraphic position in the Kapp Starostin Fm. (Svalbard) (Ezaki, Kawamura, 1992). Also one specimen of the Hapsiphyllidae has been found in the Talata Fm (Vorkuta region). The post Late Artinskian, but pre - Late Permian assemblage is distinctly impoverished. The strong Roadian (Kazanian) transgression accompanied by some increase of diversity led to the re-appearance of „*Cyathaxonia*" fauna, represented by *Calophyllum* and *Paracaninia*, which were found together with *Sverdrupites* sp. (Ammonoidea)(Esaulova, 2001).

Thus, two Permian assemblages are distinguished in the temperate zone of Panthalassa. The Late Artinskian is considered as the initial one and the Late Permian assemblage shows similarity with non-columellate genera of the Late Artinskian and *Calophyllum* could be the only typical feature.

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